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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/678,256 | 10/06/2003 | Hidetoshi Nakata | 031740 | 1988 |
| 23850 | 7590 | 09/14/2005 | EXAMINER | |
| ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP 1725 K STREET, NW SUITE 1000 WASHINGTON, DC 20006 | | | WU, SHEAN CHIU | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1756 | |

DATE MAILED: 09/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

(Supplement)
Office Action Summary

Application No.

10/678,256

Applicant(s)

NAKATA ET AL.

Examiner

Shean C. Wu

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-18 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

1. The previous Office Action has been withdrawn because the elected species reads on Claims 1-18. Claims 5-6 and 8-16 withdrawn from further consideration in the previous Office Action are mistake. Therefore, the new Office Action is issued herein.

2. Applicant's election without traverse of electing species VIe and VII-h in the reply filed on 4/18/05 is acknowledged. The elected species comprising the compounds of VIe and VII-h read on Claims 1-18.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 9-217,062.

The reference discloses a chiral nematic liquid crystal composition with a helical pitch adjusted up to 4 μm vs 0.1 to 3 μm of the present invention. The composition comprises at least one compound of formulae (I) and (II-a)-(IIc), at least one compound of formulae (III)-(V) and at least one of optically active compound of (VI-a)-(VI-c). The

reference composition has a low viscosity, low temperature compatibility, a wide temperature range and small temperature dependence of pitch for bi-stable switching liquid crystal display device. The optically active compounds (VI-b-1)-(VI-b-4) of the reference read on the present formula (I-a). The reference compounds of (II-a)-(II-c) and (III-13)-(III-15) read on the compounds of the present formulae (IV) and (III), respectively. The reference further discloses other optically active compounds (sixth to ninth compounds) used in liquid crystal compositions are listed in Table 2 beside (VI-a)-(VI-c). The sixth to eighth compounds in Table 2 read on the present formula (II-a and II-e with terminal group (II-f) in the present claim 13). See Example 16 in section [0052], which liquid crystal composition comprising two optically active compounds of 80BBE1*(Et)B and 21*(Me)1OBBC.

The reference differs from the claims in that the claims comprise 80BBE1*(Me)B instead of 80BBE1*(Et)B in the reference Example 16. Because the optically active compounds of 80BBE1*(Me)B and 80BBE1*(Et)B are not only having the similar structure (homolog with CH₂ difference) and are also functionally equivalent, it would have been obvious to those skilled in the art to substitute 80BBE1*(Me)B for 80BBE1*(Et)B in the reference Example 16 to arrive at the claimed invention.

With respect to Claims 7-8 and 15-16, the reference did not disclose the concentration ranges of the present optically active compounds. However, it would have been obvious to those skilled in the art to adjust the concentration ranges of the disclosed compounds by the reference to obtain the present pitch.

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With respect to Claim 17, because the liquid crystal composition of reference example 16 comprises two optically active compounds and host liquid crystal mixture like the present claim, one ordinary skill in the art would expect the similar temperature dependency as present claim.

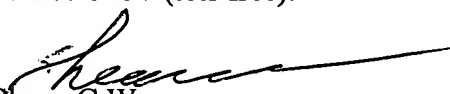
The elected species comprising the compounds of formula (VI-e) and (VII-h) are also rejected because the reference example 16 in view of JP 5-281,525. The formula VI-e is known and equivalent to general formula (1) (see sections [0012], [0049], [0057] and [0062]). Therefore it would have been obvious to those skilled in the art to substitute chemical formula 3 in section [0049] of JP '525 for 80BBE1*(Et)B of JP '062 to arrive at the elected species.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shean C. Wu whose telephone number is 571-272-1393. The examiner can normally be reached on 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Shean C Wu
Primary Examiner
Art Unit 1756

SCW